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World Health
Organization

International Code of Conduct on Pesticide Management

Guidance note on online sales of pesticides



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on Pesticide Management**

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Food and Agriculture Organization of the United Nations
World Health Organization
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Preface

This guidance was prepared with the support of the FAO/WHO Joint Meeting on Pesticide Management (JMPM) to provide further guidance on the provisions of *The International Code of Conduct on Pesticide Management* (referred to hereafter as the *Code of Conduct*) related to its observance and implementation. It reflects the joint FAO/WHO approach to pesticide management, thus addressing the topic in both agricultural and public health settings.

This *Guidance on online sales of pesticides* was drafted under the lead of a JMPM panel member and a FAO-hired consultant according to the latest guidance for implementing the *Code of Conduct* and its technical guidance series. This guidance benefited from the recommendations of expert members of the FAO/WHO Joint Meeting on Pesticide Management. It was then reviewed by the entire JMPM group including representatives of the Observer organizations, and FAO and WHO staff. Subsequent revisions were made on the basis of the comments and technical contributions received from reviewers.

In the years since the development of the *Code of Conduct*, online sales of pesticides have grown and become a significant channel for pesticide sales and supply in many countries around the world. Online pesticide sales pose new challenges for legislators and regulators, including complexities related to additional players (such as online platforms), online anonymity, transportation risks, challenges related to consumer information and advertising, new opportunities for introducing illegal pesticides on the market, and more. The impacts and risks of online sales of pesticides underscore the need for countries to strengthen their legal frameworks and build their capacity to enforce compliance with rules designed to protect human health, animal health, and the environment. Accordingly, this guidance aims to raise awareness and highlight key issues for legislators and regulators, particularly from low- and middle-income countries, working to develop sustainable and responsible practices for the online sales of pesticides.

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Declarations of interest

FAO and WHO reported that they had received and reviewed declarations of interest from all FAO and WHO expert panel members who participated in the 17th JMPM and had concluded that none could give rise to a potential or reasonably perceived conflict of interest related to the subjects discussed at the meeting.

Abbreviations

FAO	Food and Agriculture Organization of the United Nations
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IICAP	Internet Sales of Illegal, Counterfeit, and Adulterated Pesticides
IPM	integrated pest management
LMIC	low- and middle-income country
POP	persistent organic pollutant
SDS	safety data sheets
JMPM	Joint Meeting on Pesticide Management
WHO	World Health Organization

1. Introduction

Pesticides are widely used in agricultural production, vector control and household pest control. In the era of rapid internet and trade globalization, the online sale of pesticides has become a significant means of pesticide sales and supply.

For purposes of this guidance note, online sales of pesticides are sales made through digital methods, such that buyers and sellers use the internet or electronic means to sell. These sales predominantly take place through various platforms or websites, including integrated e-commerce platforms (also known as third-party platforms). Internet platforms typically host a wide range of goods, including pesticides. Additionally, websites developed by pesticide companies, manufacturers, and distributors serve to enhance corporate image and promote products, offering comprehensive information and facilitating direct sales or acting as references for official distributors. Social media platforms can be utilized for advertising, negotiation, and information dissemination regarding pesticide products and therefore hold responsibility in the promotion of the pesticide.

Despite offering conveniences such as accessibility, diverse choices, and customer reviews, online sales introduce specific challenges compared to traditional offline sales of pesticides. These challenges include difficulties in exercising withdrawal rights along with the increasing anonymity of sellers, especially when third-party platforms are used; and difficulties for regulators to enforce national legislation, especially in low- and middle-income countries (LMICs), potentially increasing health and environmental risks if left unaddressed. Moreover, the borderless nature of online markets and advancements in marketing technology can surpass current regulatory measures, posing the risk of distributing illegal pesticides. Enforcement is further hindered due to the ease with which operators can swiftly enter and exit online marketplaces. Infringers not only “hide” behind the anonymity of a screen, making it challenging to identify those responsible for violations, but they can also rapidly alter the content of their websites or resume their activities after being shut down by re-registering under a new digital identity or shifting to a different e-commerce platform.

1.1 Scope

This guidance note identifies issues and challenges specific to online pesticide sales, covering key aspects, including possible options for approaches to regulating online pesticide sellers (including online platforms), such as clarifying their roles and responsibilities; transportation considerations; labelling and information dissemination; establishment of a robust reporting system; supervision and enforcement mechanisms for online pesticide sales; and compliance with international conventions and fostering collaboration. Thereby, this guidance outlines several relevant considerations for effective regulation of online pesticide sales. Common issues shared by both online and offline sales will not be addressed, as it is assumed that regulations applicable offline (such as regulations for transporting and delivering hazardous materials) also apply to online, in terms of pesticide sales.

1.2 Objective

This guidance note aims to raise awareness and provide assistance for the establishment of a national, comprehensive, and contextually relevant framework supporting sustainable and responsible practices for the online sales of pesticides. Specifically designed to address the distinctive needs of stakeholders in LMICs, this guidance note emphasizes the importance of strengthening the legislative and regulatory frameworks that govern the online sales of pesticides.

2. Challenges and risks of pesticide online sales

The rapid growth of online sales of pesticides has given rise to a lot of challenges, brought about by the entry of additional players, such as online platforms, compared to traditional sales channels, resulting in anonymity of sellers; a notable increase in the transportation of retail goods with a corresponding increase in transporter risks; and extremely accessible, misguided, and overloaded information, as well as false advertisements. A deficiency in relevant laws and regulations, particularly in LMICs without a sound regulatory system, makes the situation even worse. Moreover, the sale and shipment of pesticides that are banned from being used in the exporting country or prohibited from being used in the country of destination is expected, such as persistent organic pollutants (POPs).

The seller is responsible for meeting the applicable legal requirements of the country of destination, including rules on registration, labelling and transportation. In countries that are signatory members of the *Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention)*,¹ the seller has an obligation to fulfil the resulting information requirements.

Given the inherent characteristics of online sales, various risks and challenges emerge. First, online sellers on platforms, often dealing in a diverse range of goods, may not comprehend and adhere to professional pesticide-related laws, regulations, and control systems. Moreover, rules on the licensing process for online retailers might not take into consideration the same criteria (storage, training, reporting duties) that are required for issuing a license to sell pesticides.

The anonymity afforded by online platforms and the inherent mobility of internet sales, which facilitates rapid changes in the information displayed in a website, may enable sellers to frustrate monitoring and enforcement efforts by the authorities, thereby facilitating the sale and distribution of substandard and illegal pesticides, restricted-use pesticides or pesticides that have been banned or recalled in traditional markets. This poses significant challenges in market supervision, to ensure compliance with product quality standards, and could pose serious risks to public health and the environment, endangering all individuals involved in the entire chain, as well as water, soil, bees, natural predators, and other organisms.

The anonymity factor also compounds when it comes to cross-border e-commerce, including sending pesticides in private parcels, unmarked and falsely labelled to avoid detection in customs. Additionally, the international marketing of nationally banned or restricted-use products may lead to trade behaviours that violate international conventions, such as the *Rotterdam Convention* and the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*.¹

Identifying the responsible legal parties poses a significant challenge due to the complex distribution chains in online pesticide sales and the difficulties in identifying the origin of the products. The involvement of new players like fulfilment or distribution centres complicates this further, especially with their practice of “shipping on behalf of another entity”, which may not be effectively regulated by current legislation. This complexity hampers market supervision and compliance efforts. The lack of clarity in identifying these responsible parties undermines enforcement actions and contributes to issues such as the sale of illegal products.

A further challenge lies in ensuring compliance with transportation and delivery regulations. Pesticides sold online primarily involve numerous deliveries with small product quantities, likely

handled by online sellers and delivery companies who may not be familiar with complex regulatory standards and safety protocols. This increased frequency of shipments, combined with the potential for co-loading with other goods, significantly heightens the compliance burden to meet regulatory transportation standards. Lack of awareness among delivery companies about transporting pesticides can pose harm to couriers, and leaking packages can compromise human, animal, and environmental safety, contaminating other delivered items. Improper storage and transport, such as not separating pesticides from other goods, pose risks of cross-contamination, affecting the quality of other items in transit.

Another risk stems from noncompliance with labelling and advertising regulations, particularly in international trade, since online platforms frequently host marketing information that might not be aligned with the legislation on pesticide sale and advertising of all countries where the platform has activity. This may result in non-compliance with the sale, labelling, advertising and use of pesticides in the country of destination, including risk to the buyers who receive pesticides that do not meet the requirements of their country. As a result, environmental protection and consumers' safety are jeopardized due to misinformation or improper use of pesticides.

Furthermore, the enforcement capabilities of pesticide regulators are often constrained by resource limitations and technological barriers. A lack of adequate training for inspectors tasked with online enforcement and compliance further exacerbates these challenges. The absence of effective monitoring systems contributes to issues such as the violation of laws and regulations, including the sale of illegal products. This, in turn, undermines efforts to maintain the integrity of the marketplace and protect public health and safety. In situations of international trade, countries might experience difficulties in collaborating in the detection and prosecution of international operations.

In summary, the risks and challenges in the context of online sales of pesticides are multifaceted and require comprehensive strategies to address them effectively.

3. Key considerations on legislation

The impacts and risks of online sales of pesticides underscore the imperative for comprehensive legal frameworks and regulatory measures, building on the *Code of Conduct* ² and more specifically, the general principles found in the FAO/WHO publication *Guidance on Pesticide Legislation*.³ Addressing these challenges requires a nuanced understanding of the distinct dynamics of online sales and local conditions and may necessitate legislative updates that seamlessly integrate within existing frameworks. Legislators should assess and if necessary, strengthen their existing frameworks to address online sales of pesticides, ensuring that the online pesticide sellers' role is clarified, and they adhere to the same standards as traditional sellers. A holistic approach involves incorporating online sales considerations within broader pesticide legislation, encompassing all sales channels. More resources (amendment to national regulations, technology, compliance and enforcement) are required at all levels to deal with this new risk associated with online sale of pesticides. While national examples are scarce, governments can obtain valuable insights from analogous sectors, like online medicine and food sales, to address concerns over product safety, categorization, access to information, and prescription requirements as well as the related roles and obligations of the online actors.

One possible approach to consider is implementing product differentiation based on risk profiles to establish specific requirements, reflecting the national approach for offline sales. For instance, a nation may prohibit the online sale of pesticides that require specific risk management approaches (such as training or specialist equipment) where the list of prohibited substances is publicly available. Some nations have chosen to prohibit the offline sale of highly hazardous pesticides, therefore in this instance, it is appropriate that a similar prohibition applies for online sales of these pesticides. Practical examples include Spain, which permitted online sales only for pesticides labelled for non-professional use,⁴ while in the Republic of Korea, online sales are restricted to pesticides deemed to cause minor adverse effects.⁵

Another comparable approach could include requiring online sellers to have a physical store or a license to operate in the country of destination of the product. In the realm of online medicine sales, some countries limit online medicine sales to extensions of physical pharmacies. In the Philippines, pharmacies with an existing license can sell medicine online if authorized,⁶ while in China, online medicine sales are permitted for retail pharmacy chains with the required permits under specific regulations.⁷

3.1 Authorization for online pesticide sales

Ensuring that establishments and platforms selling pesticides hold the appropriate license or permit for pesticide sales and reinforcing these licenses or permits with specific criteria that responds to the specific challenges of online sales, is one possible option to ensure qualifications and adherence to safety standards. Regulators should ensure that existing licensing requirements apply equally to online pesticide sellers. Key considerations for such licensing requirements may include knowledge and expertise, possession of the necessary facilities and equipment for proper pesticide storage, record-keeping and reporting obligations, and prominent display of licenses. Online sellers of pesticides must meet the same conditions required for retail and wholesale pesticide sellers in commercial centres in terms of training and specialization, and in addition provide the necessary certificates according to the law to practice the profession. For instance, Germany mandates a competence certificate for both online and brick-and-mortar sellers.⁸

Legislators may also consider specific licensing requirements tailored to online sales of pesticides, either as an extension of general pesticide sales licenses or as distinct prerequisites. Specific labels, markers, or domain names could be designated for online pesticide sellers, creating a national reference list for consumers.

At national level, licenses or permits should describe the spatial scope of the license and whether this authorizes or not a seller to send products to other countries. Operators permitted to sell pesticides internationally should comply with the national legislation on pesticide sales in the country of destination and obtain a license to operate there. They must ensure that rules applicable to the sale, labelling and packaging of the pesticide in the country of destination are met, along with record-keeping and reporting obligations. They must also ensure that international obligations resulting from the *Rotterdam Convention* on prior informed consent are met, through appropriate notification to the competent authority of the importing country.

3.2 Obligations of online pesticide sellers and online platforms

The legal framework should outline clear obligations for online pesticide sellers. In general terms, when these entities participate in online sale of pesticides, they must ensure compliance with national pesticide legislation as well as with the legislation of the country of destination of the product. This may entail the provision of safety data sheets; compliance with labelling, packaging and advertisement rules; verification of the quality and authenticity of the product and the label; possession of relevant qualifications; and transparent measures for problematic pesticides. Legislators may specify additional obligations for online pesticide sellers within the broader pesticide legal framework, such as creating tools or algorithms to ensure that the pesticides sold are registered in the country of use, maintaining sales records, verifying consumer information, complying with disposal and return procedures, and other relevant obligations based on the country's context and existing pesticide legislation.

The online platform represents an additional and distinct stakeholder and entity in the context of online sales of pesticide compared to traditional channels. Depending on the particular platform and legal system, they may either be functionally similar to an online pesticide seller – that is they manage, sell and transport pesticides – or they may be merely providing a platform within which third parties operate. In cases where a platform is functionally similar to an online pesticide seller, legislation in some countries may treat them as online pesticide sellers covered by the same requirements as other online pesticide sellers. In cases where they merely provide the platform for third parties to operate, legislation in some countries may exclude such platforms from the scope of licensing, transport and other obligations discussed elsewhere in this guidance. However, legislation could also allocate some responsibilities to these platforms, introducing a duty to monitor and detect illegal selling through their platforms.

Even when platforms are not direct parties to the online sale of pesticides, legal systems may impose obligations and liabilities on these actors that cover such sales, given the actual power they have in facilitating such transactions. They should be held accountable for ensuring that sellers comply with licensing requirements. A straightforward solution could involve platforms requesting sellers to provide a license to sell pesticides within a stated nation. If a seller fails to produce a valid license for the nation, the platform should refrain from listing the sellers' products for that nation. This approach is best delivered through engagement with the online platform and notifying them of a requirement on sellers of pesticides to furnish a license for supply in the destination country.

3.3 Transportation

Online sales typically involve frequent deliveries with small product quantities, often mixed with other goods. Adherence to international guidance, including the *United Nations Recommendations on the Transport of Dangerous Goods*,⁹ is essential for safe pesticide transport. Regulators should ensure that transportation of pesticides sold online is covered by the same rules as traditionally sold pesticides. Training for building adequate capacity should be provided to workers in the transport of pesticides in terms of risks, dealing with accidents during transport and first aid procedures in cases of poisoning, as well as avoiding the use of roads adjacent to water resources and rivers. To prevent contamination of other goods, establishing emergency response plans with instructions for handling incidents during transportation, carrying spill containment equipment, and ensuring effective communication channels for a prompt response among online sellers, online platforms and manufacturers, are essential. Regulators may require online sellers to collaborate with experienced transport service providers to verify compliance with regulations, licensing, and insurance while defining clear responsibilities in the transportation process. Additionally, regulators may require online sellers to implement consistent transportation policies, especially for returns, exchanges, or recalls of online-sold products, and utilize the same delivery company to ensure adherence to safety protocols throughout the process, ensuring compliance with data collection and reporting obligations.

3.4 Labelling and information dissemination

The digital information relating to pesticides sold online is easily produced and accessible, is presented in various ways, and could potentially lead to information overload and distortion. Pesticides sold online should be accompanied by accurate information responding to national legislation and it is crucial to follow the recommendations included in the *Code of Conduct* provisions on advertising in Article 11 and the *International Code of Conduct on the Distribution and Use of Pesticides – Guidelines on Pesticide Advertising*.¹⁰

Likewise, pesticides sold online should meet the regulations on pesticide labelling, ensuring compliance with approved labels and pictograms to be included in the packaging, as per national legislation, the *Globally Harmonized System of Classification and Labelling of Chemicals (GHS)*,¹¹ and the recommendations in the *Code of Conduct*. Labels should be displayed in the language of the country of destination, ensuring that the information is properly understood. Pesticides should be accompanied by the approved safety data sheets (SDS).

In addition, the information included online should be accurate and balanced. Facilitating access to reliable information on integrated pest management (IPM) practices, alternative solutions to pesticides, and the appropriate use of personal protective equipment is also needful, which can be achieved through official websites, online resources, or collaboration with organizations specializing in pesticide safety and IPM.

Additionally, regulators may encourage and/or require online pesticide sellers to provide appropriate warnings and educational materials on their platforms, emphasizing the importance of proper pesticide application, storage, handling, and disposal. Platforms and websites should also facilitate access to the mechanisms for incident reporting, ensuring that buyers are informed about the need to report and how to carry out incident reporting, as described in the next section.

3.5 Reporting system

The online sale of pesticides should facilitate the implementation of a reporting system for pesticide incidents, including pesticides sold online. The system for reporting pesticide incidents should adhere to the FAO/WHO publication *Guidelines on Developing a Reporting System for Health and Environmental Incidents Resulting from Exposure to Pesticides*.¹² Active involvement of online platforms and online pesticide sellers is crucial in promoting and raising awareness about the reporting system among pesticide users. Online platforms could potentially play a pivotal role if they are required to provide a user-friendly interface that allows pesticide users to report incidents conveniently and confidentially. This includes facilitating the reporting process through the categorization of different types of incidents and offering standardized reporting forms. Additionally, the reporting system should foster collaboration among pertinent stakeholders, including regulatory authorities, healthcare institutions, online platforms and online pesticide sellers.

3.6 Supervision and enforcement

Ensuring compliance in online sales of pesticides requires appropriate legal mandates, human and financial resources, and inter-departmental cooperation. Given the distinctive features of online sales of pesticide, supervision and enforcement should extend beyond standard practices applied to pesticides sold through traditional channels. This involves verifying sale licenses (including online sale licenses where required) and conducting regular or irregular inspections of delivery/courier networks engaged in pesticide distribution. Inspectors should have a legal mandate and receive training specific to online inspections, utilizing computerized monitoring systems for targeted investigations based on key words or patterns. Inspectors could also be mandated to assume pseudonyms and directly order pesticides for inspection purposes while posing as regular customers (commonly referred to as a “mystery shopper” in the field of food e-commerce).

To effectively conduct these operations, a legal basis obliging payment service providers and parcel services to cooperate with authorities might be necessary. Additional challenges arise when there is no sufficient legal basis for official measures, such as when criminal sellers operate unique web shops with fake imprints or business addresses. Significant effort might be required to identify the business operators and shut down web shops offering illegal or irregular products. The legitimization for official measures against third parties, such as web host services, could be crucial in these scenarios.

Enhanced transnational cooperation is vital to address online pesticide sales crossing different jurisdictions. Collaboration and information sharing between the supply and distribution countries can help to combat illegal online pesticide sales. Such collaboration is also important across agencies. In the United States of America, the Internet Sales of Illegal, Counterfeit, and Adulterated Pesticides (IICAP) task force exemplifies this approach. It brings together representatives from key organizations, including the Association of Structural Pest Control Regulatory Officials, the National Pest Management Association, Responsible Industry for Sound Environment, and the National Association of State Departments of Agriculture.¹³ This collaborative task force encourages cooperation among states to collectively address and combat illegal online pesticide sales.

Regarding offenses and penalties, legislators can consider introducing specific legal provisions that deter violations related to online sales of pesticides. These offenses should have corresponding penalties to ensure accountability. Examples of penalties can include administrative offenses and fines, as seen in Germany,¹⁴ or imprisonment with labour and monetary fines, as observed in the Republic of Korea.¹⁵ Online offenses may be considered as specific circumstances to determine the severity of penalties.

3.7 International collaboration and compliance with international conventions

International collaboration is crucial for regulating cross-border online pesticide sales and ensuring adherence to international conventions such as the *Rotterdam Convention* and the *Stockholm Convention on Persistent Organic Pollutants (POPs)*,¹ which regulate the trade and use of hazardous substances, including pesticides, with a focus on responsible practices. Countries should unite against illegal trade, including illicit online sales of pesticides, by sharing information and best practices to effectively address cross-border challenges.

FAO and WHO welcome readers' feedback

FAO and WHO welcome readers' feedback on use of these guidance notes. FAO and WHO consider that these guidance notes are a living document that could be further improved. They therefore particularly value any feedback from users of the guidance and welcome any comment. They also value examples of how the guidance was used.

Please send your suggestions, comments and examples to pesticide-management@fao.org indicating the title of the guidance and the relevant section and page.

Notes

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- ¹ United Nations. 2024. The Basel, Rotterdam and Stockholm Conventions. In: *BRS Conventions*. [cited: 15 November 2024]. <https://www.brsmeas.org>
 - ² FAO & WHO. 2014. *The International Code of Conduct on Pesticide Management*. Rome. <http://www.fao.org/3/I3604E/i3604e.pdf>
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 - ⁴ Spain. *Royal Decree No. 285/2021, of 20 April and Modifies Royal Decree 1311/2012, of 14 September 2021. Art. 14(1)*.
 - ⁵ Republic of Korea. *Pesticide Control Act (농약관리법)*, 1995. Art. 21(3).
 - ⁶ The Philippines. *Food and Drug Administration Advisory, No. 2019-154*.
 - ⁷ Baker McKenzie. 2022. *Telemedicine and Telehealth Legal Framework Overview*, p. 4 (China). https://www.bakermckenzie.com/-/media/files/insight/topics/healthcare-life-sciences/baker-mckenzie-telemedicine-and-telehealth-legal-f.pdf?sc_lang=en&hash=BAE0C28E4145CA80515B9E5D5F35F97A
 - ⁸ Germany. *Law on the Protection of Crops (Gesetz zum Schutz der Kulturpflanzen)*, 2012. Sec. 9(1)(5).
 - ⁹ United Nations. *Recommendations on the Transport of Dangerous Goods*, 2011. ST/SG/AC.10/1/Rev.17 (Vol.I). https://unece.org/DAM/trans/danger/publi/unrec/rev17/English/Rev17_Volume1.pdf
 - ¹⁰ FAO & WHO. 2010. *International Code of Conduct on the Distribution and Use of Pesticides – Guidelines on pesticide advertising*. Rome. <https://openknowledge.fao.org/handle/20.500.14283/bt472e>
 - ¹¹ United Nations. 2023. *Globally Harmonized System of Classification and Labelling of Chemicals*, ST/SG/AC.10/30/Rev.10. New York, USA and Geneva, Switzerland. <https://unece.org/transport/documents/2023/07/standards/ghs-rev10>
 - ¹² FAO & WHO. 2009. *International Code of Conduct on the Distribution and Use of Pesticides – Guidelines on Developing a Reporting System for Health and Environmental Incidents Resulting from Exposure to Pesticide*. Rome. <https://www.fao.org/3/bt562e/bt562e.pdf>
 - ¹³ North Coast Media LLC. 2021. EPA orders Amazon to stop illegal pesticide sales, again. In: *Pest Management Professional*. Authored by Danielle Pesta. [cited: 15 November 2024]. <https://www.mypmp.net/2021/02/12/epa-orders-amazon-to-stop-illegal-pesticide-sales-again>
 - ¹⁴ Germany. *Law on the Protection of Crops (Gesetz zum Schutz der Kulturpflanzen)*, 2012. Art. 68(1)(4).
 - ¹⁵ Republic of Korea. *Pesticide Control Act (농약관리법)*, 1995. Art. 33(1-3).

Online sales of pesticides have grown to become a significant channel for pesticide sales and supply in many countries around the world. However, online sales of pesticides involve new players such as online platforms, and new challenges such as online anonymity, transportation risks, consumer information and advertising, sale of illegal pesticides, and more. This guidance highlights key issues for countries working to develop sustainable and responsible practices for the online sales of pesticides.

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